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Firearm-Related Deaths in the Alaska Native Population

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Abstract

A manual and computer search of Alaska Native death certificates for firearm-related fatalities from 1990-1992 was conducted. During this three-year period, 116 Alaska Natives lost their lives due to firearm injuries; 88 (76%) of these deaths were suicides. Firearms were the leading cause of injury death for Alaska Natives during this study period. Ninety-two percent of the victims were male, with nearly half of the deaths occurring between the ages of 20-29. Contributing factors and potential solutions are discussed.

Introduction

In the United States, during the 1980s, almost three times as many people died from the use of firearms as from the AIDS virus; this also represented more than five times the number of Americans killed in the Vietnam war.[1]

Firearm mortality is the eighth leading cause of death in the United States, with a rate of 15 firearm-related deaths per 100,000 people.[2] In 1991, there were over 38,000 firearm-related deaths in the U.S. and 240,000 non-fatal firearm injuries.[3]

Nationally, American Indians experienced a firearm death rate of 23.9 per 100,000 for the years 1979-1987. The Alaska Native population, by comparison, had a firearm death rate of 59.7 per 100,000 for the same period.[4] This firearm death rate for Alaska Natives is more than double the Alaska all races rate of 26.3 per 100,000.[5] Firearm-related injuries were the leading cause of injury death among Alaska Natives during this study period.

Several studies have been published documenting the role of firearms in suicides, in homicides, or in unintentional injuries, but no research has been published to document the epidemiology of Alaska firearm-related deaths. A need was identified to examine all firearm-related deaths among the Alaska Native population, and to determine the epidemiology and possible risk factors involved.

Methods

To be included in this study, the victim had to be an Alaska Native who died from a gunshot wound during the years 1990-1992. Death certificates from the Alaska State Department of Vital Statistics for the years 1990-1992 were manually searched to find intentional and unintentional deaths resulting from the use of a firearm. Legal interventions by

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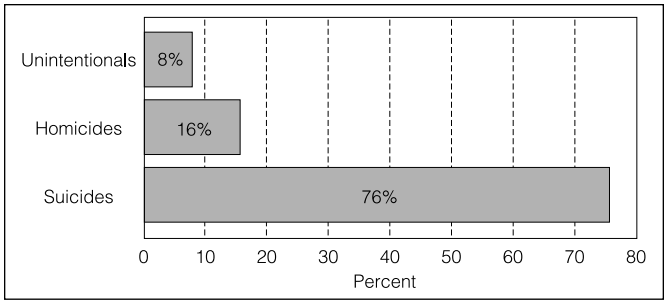
police were excluded. Data from the manual search of death certificates were later compared to a computer search by the Department of Vital Statistics, which resulted in the same totals. Population estimates for calculating rates were obtained from the Alaska Area Native Health Service.[6]

Results

During the three-year period, 116 Alaska Native people lost their lives due to firearm injuries. Eighty-eight (76%) of the deaths were classified as suicides, 19 (16%) were homicides, and 9 (8%) were unintentional (Figure 1). The rate of firearm-related suicides among Alaska Natives was 31.1/100,000 for 1990-92.

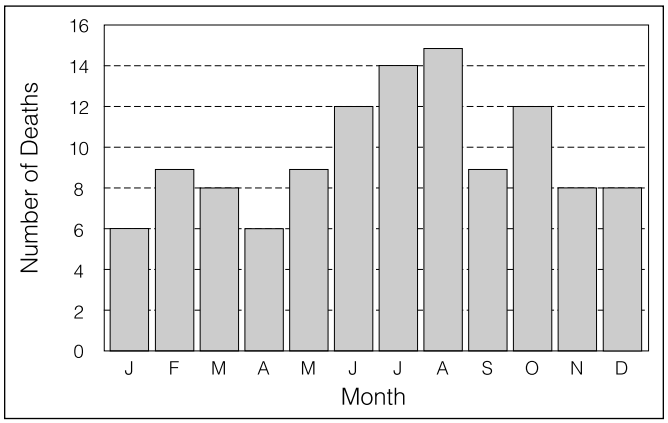
Figure 1. Alaska Native firearm-related deaths, by intent (percent), 1990-1992 (N=116).



Alaska Native males accounted for 92% of the Native firearm deaths. The age-specific rates were highest among the 20-29 year olds, accounting for 49% of the total firearm deaths. Ages 10-19 accounted for another 25% of the firearm deaths.

The seasonal pattern of the firearm deaths showed a peak in June, July, and August, as shown in Figure 2.

Figure 2. Alaska Native firearm-related deaths, by month, 1990-1992 (N=116).

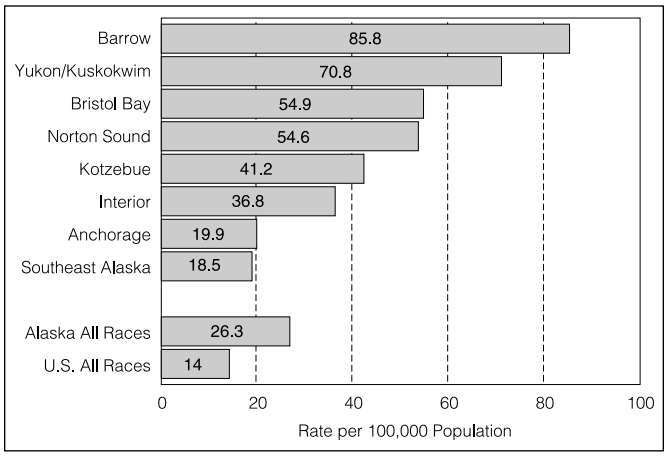


The type of weapon used was documented in only 35 (30%) of the 116 cases. Of these cases, long guns (rifles and shotguns) accounted for 19 (54%) and handguns for 16 (46%) of the deaths.

Of the 116 death certificates, 85% listed the deceased as single, 12% as married, and 3% as divorced.

Alaska is divided into eight regions, or "service units," by the Alaska Area Native Health Service. A three-year average firearm death rate per 100,000 population was calculated for each of the service units, so that regional rates could be compared. This three-year rate ranged from 18.5 for the Southeast Alaska Service Unit to 85.8 for the Barrow Service Unit (Figure 3).

Figure 3. Firearm-related death rates for Alaska Natives by service unit, compared to the all races rates for the State of Alaska and the U.S.



Discussion

The rate of firearm-related suicides among Alaska Natives rose dramatically from 14/100,000 for the years 1981-1985[7] to a rate of 31.1/100,000 for the years 1990-1992.

Since suicides are by far the leading type of firearm-related death (76%), special consideration should be given to this category. Research by Brent et al showed that firearms were twice as likely to be found in the home of a suicide victim as in the home of a suicide attempter.[8]

Research by Hlady and Middaugh found detectable blood alcohol levels in 79% of the Alaska Native suicide victims in 1983-84.[9] Personal observations and anecdotal information from a variety of Alaska Native groups suggest that one of the contributing factors for increased rates of firearm fatalities in the summer months may be increased alcohol availability. Many Native wage earners have seasonal employment from commercial fishing, fire fighting, construction, etc. Some Native people believe that alcohol use, and in turn firearm injuries, increase as the workers return to their communities with large sums of money. Alcohol sales to rural areas, plotted by month and by service unit, would be an interesting topic for further research.

According to data obtained in this study, the profile of Alaska Native firearm victims indicates they are most at risk for committing suicide during the summer months, they are male, between the ages of 15-30, abusing alcohol/drugs, and have a firearm in their home. Researchers in other regions of the U.S. have identified additional risk factors, such as a prior arrest record, domestic violence in the home, and taking prescription psychotropic drugs.[10]

> "Firearm mortality is the eighth leading cause of death in the United States…"

Conclusions and Recommendations

In the past, head injuries were considered just one of the many types of injuries associated with bicycles, motorcycles, automobiles, falls, etc. More recently, head injuries from all causes were grouped together to better identify risk factors and prevention strategies. Using the same logic, a need clearly existed for compiling all Alaska Native firearm-related deaths to see what unique characteristics could be discovered. Some of the findings of this study were that males were greatly overrepresented (92%), seasonal peaks were in the summer, the victims were not married (85%), and that suicide was the predominant motive (76%). In comparison, national statistics show that 52% of the firearm deaths were suicides, and 86% of the victims were male.[11]

One recommendation for decreasing the number of firearm-related suicides is to implement a broad-based educational program for the recognition of symptoms in the suicidal individual. Since 92% of the firearm-related deaths in this study involved the intentional use of a weapon, trigger locks or gun safety education would probably be of little value. Therefore, a logical intervention might be to remove weapons from the homes of people at greatest risk.

Each Native community in Alaska has the opportunity to develop and enact ordinances governing their own village. One intervention proposal would be to require anyone threatening the life of another person or themselves, especially while under the influence of alcohol, to surrender their firearms for a week or some other specified period of time. A repeat offender might have their weapons removed for a month or even a year. This intervention might serve to decrease the likelihood of impulsive actions.

The number of deaths resulting from firearms among Alaska Natives is excessive and needs to be addressed as a public health issue. We cannot afford to merely teach Native children better social and coping skills and wait for a generation to see if it works. We need to confront this injury problem now, and we need to look at changes that can be made to make the gun (engineering), the home (environmental), and the person (education) safer.

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Erratum

An error was made in the article entitled "Guidelines for Prevention and Control of Hepatitis A in American Indian and Alaska Native Communities" in the January 1996 issue of *The IHS Primary Care Provider* (Volume 21, Number 1, page 4). In the second paragraph in the right column, the second sentence read: "This was also observed in follow-up of two Northern Plains communities participating in vaccine efficacy trials and in a demonstration project in Alaska Native villages experiencing epidemics of hepatitis A.[5,6,8]" The reference to 'Northern Plains' should be deleted and the sentence *should* read: "This was also observed in follow-up of two communities participating in vaccine efficacy trials and in a demonstration project in Alaska Native villages experiencing epidemics of hepatitis A.[5,6,8]"

American Indians and Alaska Natives: Defining Where They Reside

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Introduction

There is often confusion regarding how many American Indians and Alaska Natives live in urban versus rural areas and metropolitan versus non-metropolitan areas. It is generally assumed that if a person lives on or near an Indian reservation, then that person resides in a rural and non-metropolitan area. This is not necessarily the case. For example, Indians living in the northwest portion (i.e., within Yellowstone County, Montana) of the Crow Indian Reservation reside in a metropolitan area while others on this reservation (i.e., within Bighorn County, MT) reside in a non-metropolitan area. This is because Yellowstone County comprises the Billings, MT Metropolitan Statistical Area. However, not all of Yellowstone County is in the Billings MT Urbanized Area. As a result, even though all Indians living in Yellowstone County reside in a metropolitan area, not all reside in an urban area. Much of the confusion concerning urban and rural and metropolitan areas stems from a misunderstanding of what these concepts mean. This article will attempt to clarify the concepts of urban and rural, metropolitan areas, and other geographic terms as they relate to the IHS and the American Indian and Alaska Native population.

"Much of the confusion concerning urban and rural and metropolitan areas stems from a misunderstanding of what these concepts mean."

IHS Geographic Entities

The IHS health care system (which consists of *direct* and *contract* services run by IHS and tribal programs) primarily serves reservation-based, Federally-recognized Indians, since IHS/tribal health care facilities are located on Indian reservations where most American Indians resided at the time the treaties providing for health care services were signed. (Note that not all Indian lands are referred to as reservations. See the discussion of *American Indian and Alaska Native Areas* in a later section of this article.) Members and descendants of Federally-recognized tribes, regardless of location, are eligible for IHS/tribal *direct* services. However, practicality limits use of IHS/tribal direct services generally to Indians living on or near reservations where the IHS/tribal facilities are located.

By contrast, persons are eligible for IHS/tribal *contract* services only if they are eligible for IHS/tribal direct services as described above and, in addition, they (a) actually reside "on or near" a Federally-recognized tribe's reservation (generally defined in the regulations as the county(ies) containing or adjacent to these reservations; often referred to as contract health service delivery areas [CHSDAs]); and (b) are members of, or have close social and economic ties with, that tribe. Non-Indians are also eligible for IHS/tribal contract services under limited conditions (e.g., a foster child of an Indian parent, a pregnant spouse of an Indian).

The *IHS service area* is defined, for statistical purposes, as the geographic area consisting of all CHSDA counties. Although this is a useful concept for planning and analytical purposes, it is not a legal definition. This is because residency within a CHSDA county is not necessary to be eligible for IHS/tribal direct services and it is also not sufficient to be eligible for IHS/tribal contract services. However, for the most part, the regular users of the direct system reside in CHSDA counties and most people residing in a CHSDA county that are eligible for direct services are also eligible for contract services.

The IHS service area is divided into 11 regional administrative units called *Area Offices.* There is also an Office located in Tucson that is responsible for administering health services delivery. For statistical purposes, the Tucson Office is also considered an Area Office, thereby making 12 in total. Each Area Office is divided into administrative entities called *service units.* They serve as the basic health care organization for a geographic area served by the IHS program, just as a county or city health department is the basic organization in a state health department. As of October 1, 1994, there were 143 IHS and tribal service units. A list of IHS Areas, service units,

and counties is available from the IHS Division of Program Statistics.

In addition to the reservation-based health program, IHS also funds Indian-operated Urban Projects in selected cities. The 1976 Indian Health Care Improvement Act, P.L. 93-638 as amended, authorized programs to improve health care access for Indian people living in urban areas. The Urban Projects provide services ranging from information, referral, and community health services to comprehensive primary health care services. The catchment areas for Urban Projects are not defined by Congress, and IHS has no standard definition for these catchment areas. However, for planning and statistical purposes, the Division of Program Statistics has developed geographic concepts for the Urban Projects. These will be discussed in a later section of this article. There is an overlap between the traditional IHS service area (CHSDAs) and the catchment areas for Urban Projects, since some of the Urban Projects are located in cities that are part of CHSDA counties. This will also be explored later.

"Neither the Congress nor the IHS has defined official Urban Project Catchment areas."

Census Geography

"Census geography" refers to the geographic areas (referred to as census geographic entities), as defined and used by the Bureau of the Census in its data collection and tabulation operations. The Bureau of the Census produces published and unpublished statistics from its many censuses and surveys for large areas (such as census regions, metropolitan areas, states, counties, and cities) and from the decennial census (for small areas down to the size of a city block). Some of these geographic entities are legally defined, while others are established specifically for statistical purposes. A thorough description of census geography is presented in the Census Bureau publication, *A Guide to State and Local Census Geography*, 1990 CPH-I-118, June, 1993.

Only some of the census geographic entities have relevance to the IHS and the Indian population. This is primarily due to the unavailability of Indian-specific data for small areas (e.g., below the county level) because of confidentiality considerations and sampling variability for data collected (e.g., education, income). The census geographic entities of most use to IHS are the United States, states, American Indian and Alaska Native areas, metropolitan areas, urbanized areas, urban or rural, and counties.

The IHS cannot produce postcensal (e.g., beyond 1990, the last decennial census) Indian population estimates or projections for any census geographic entity that is not based on whole counties (e.g., metropolitan areas, urban, and rural). Indian birth and death data are needed for such calculations, and IHS only has these data by county. That is, IHS Indian population estimates beyond 1990 are projected through linear regression techniques, using the most current 10 years of Indian birth and death data provided by the National Center for Health Statistics at the county level. The natural change for a county (i.e., estimated number of births minus estimated number of deaths) is applied to the 1990 census enumeration for the county. However for metropolitan areas, IHS uses a modified definition in order to be able to produce postcensal population numbers for this entity. If a metropolitan area includes a portion of a county, IHS includes the whole county in the metropolitan area. This situation occurs in New England, as described in the section on *Metropolitan Areas*, in Table 1. This has relatively little effect on the calculation of what proportion of the U.S. and IHS service area Indians live in metropolitan areas because of the minor New England contribution to the totals. However, it results in over-estimates of this proportion for the New England area because more Indians are included in metropolitan areas (i.e., the whole county) than should be.

Catchment Areas for Urban Projects

The IHS funds Indian-operated Urban Projects in selected cities. Congress separately authorized these projects, distinct from the traditional health programs on reservations. Neither the Congress nor the IHS has defined official Urban Project catchment areas. The projects typically serve Indians who are able to access their services. However, for planning and statistical purposes the IHS Division of Program Statistics has developed geographic concepts for the Urban Projects.

Each Urban Project can be identified by the name of one or more cities (e.g., Denver; Omaha-Lincoln-Sioux City). The method for defining the catchment area is tied to the cities associated with the project, as described below (see Table 1 for definitions of italicized terms).

- If the Urban Project city is the sole city mentioned in the name of a *metropolitan statistical area* (MSA), then the MSA is the catchment area. For example, the catchment area of the Billings Urban Indian Project is the Billings, MT MSA.
- If the Urban Project city is the sole city mentioned in the name of a *primary metropolitan statistical area* (PMSA), then the PMSA is the catchment area. For example, the catchment area of the Milwaukee Urban Indian Project is the Milwaukee, Wisconsin PMSA (which, in turn, is part of the Milwaukee-Racine, WI *consolidated metropolitan statistical area*, CMSA).
- If the Urban Project city is not the sole city mentioned in the name of an MSA/CMSA/PMSA, then the city (incorporated) is itself the catchment area. For example, the catchment area of the Salt Lake City Urban Indian Project

Table 1. The Bureau of the Census definitions of geographic entities.

United States. The land which encompasses the 50 states and the District of Columbia.

State. For the purposes of data presentation, the Bureau of the Census treats the District of Columbia as the equivalent of a state.

American Indian and Alaska Native Areas. These areas include the following legally-defined entities and statistical entities.

Legally-defined entities:

- *Federally-recognized American Indian reservations* (some are called pueblos, rancherias, colonies, communities, etc.) established legally by treaty, statute, and/or executive or court order (the boundaries of which are identified by the Bureau of Indian Affairs, BIA). For example, Alabama has one American Indian reservation: the Poarch Creek Reservation, located in Elmore and Escambia Counties. California contains 99 Indian reservations, many of which are referred to as rancherias. In the early 1900s, Congress appropriated funds for the purchases of small parcels of land for Indian communities with no land holdings of their own. These small government reserves were called rancherias.

- *State-recognized American Indian reservations,* which comprise lands held in trust by state governments for the use and benefit of a specific tribe (the boundaries of which are identified by state officials). For example, Connecticut has three State-recognized reservations: Golden Hill, Paucatuck Eastern Pequot, and Schagticoke. The Mashantucket Pequot Reservation is the only federally-recognized reservation in Connecticut.

- *Off-reservation trust lands* associated with specific federal reservations or tribes (the boundaries are identified by the BIA). For example, the Poarch Creek Reservation in Alabama has associated trust lands in Escambia County.

- *Alaska Native Regional Corporations.* These Corporations were established by Congress in 1972 in the Alaska Native Claims Settlement Act to conduct both business and nonprofit affairs of Alaska Natives. Most of the State of Alaska has been divided into 12 areas. Alaska has one American Indian reservation called the Annette Islands Reserve, located in the Prince of Wales-Outer Ketchikan Census Area. In addition, there are 12 Alaska Native Regional Corporations, e.g., Arctic Slope Regional Corporation, whose boundaries cover the remainder of the State outside the Annette Islands Reserve (a 13th corporation is comprised of Alaska Natives residing outside the State).

Statistical entities:

- *Alaska Native Village statistical areas.* These areas encompass the settled portion of Alaska Native villages, which constitute tribes, bands, clans, groups, villages, communities, or associations in Alaska (recognized pursuant to the Alaska Native Claims Settlement Act). There are 217 Alaska Native village statistical areas (e.g., Akhiok) within the corporation boundaries.

- *Tribal jurisdiction statistical areas* (Oklahoma) and *tribal designated statistical areas* (other states). These entities generally delimit the area that contains the American Indian population over which a Federally- or state-recognized landless tribe has administrative jurisdiction and/or for which it may provide benefits and services to its members. Oklahoma has one American Indian reservation, the Osage Reservation. Oklahoma also has 15 tribal jurisdiction statistical areas (TJSAs; e.g., Cherokee TJSA) and two joint area TJSAs (Creek-Seminole Joint Area TJSA and Iowa-Sac and Fox Joint Area TJSA) where the boundaries of adjacent TJSAs overlap. Approximately two-thirds of the land area of the State is covered by TJSAs. An example of a tribal designated statistical area (TDSA) occurs in Massachusetts. Massachusetts has one

Table 1. continued

TDSA, Wampanoag-Gay Head TDSA, for that federally-recognized tribe.

Metropolitan Areas. A metropolitan area (MA) represents a large population nucleus, together with adjacent communities that have a high degree of socio-economic integration with that core area. Each MA must contain either an incorporated place (or a census-designated place or minor civil division in a very few, specific instances) with a population of at least 50,000, or a Census Bureau-defined urbanized area (see definition below) and a total MA population of at least 100,000 (75,000 in New England). Each MA outside of New England consists of one or more central counties that have close socio-economic relationships with the central county(s). An outlying county must have a specified level of commuting relative to the central county(s) and must meet certain criteria regarding metropolitan character, such as population density, urban population, and/or population growth. In New England, county subdivisions (primarily cities and towns) rather than counties constitute the MAs. For example, the Bangor, Maine MA consists of Penobscot and Waldo Counties. (The Penobscot Service Unit in the IHS Nashville Area includes all of Penobscot County. Waldo County is outside the IHS service area.) Currently, the U.S. Office of Management and Budget (OMB) establishes the standards and designates the names and geographic components of MAs, based on decennial census data.

MAs are referred to using specific terms, as the following description explains. Individual MAs used to be called *standard metropolitan statistical areas* (SMSAs). OMB revised the standards for MAs in 1980 and 1990. The 1980 revisions included the redesignation of the basic entities as *metropolitan statistical areas* (MSAs). The basic entities (metropolitan areas, MAs) are now called metropolitan statistical areas (MSAs). For example, Tucson, Arizona MSA consists of Pima County. (Pima County is split between the Sells and Pascua Yaqui Service Units in the IHS Tucson Area.) An MSA may be divided into smaller components if (a) it has a census population of at least one million, (b) it contains two or more counties or groups of counties (cities and towns in New England) each of which displays very strong internal socio-economic links in addition to the ties to the other portions of the MSA, and (c) local opinion favors recognition of the sub-areas as separate components. If these requirements are met, each sub-area is designated as a *primary metropolitan statistical area* (PMSA), and the original MSA is redesignated as a *consolidated metropolitan statistical area* (CMSA). For example, there is the Los Angeles-Riverside-Orange County, California CMSA which is made up of three PMSAs: Los Angeles-Long Beach, CA PMSA (Los Angeles County), Orange County PMSA (Orange County), and Riverside-San Bernardino, CA PMSA (Riverside and San Bernardino Counties). (Only the Riverside-San Bernardino, CA PMSA of this CMSA is part of the IHS California Area service area.) To summarize, MAs are currently referred to as MSAs. However, if the MSAs are further divided into sub-areas, they are then referred to as CMSAs, and their sub-areas are referred to as PMSAs.

In each MSA/CMSA, the most populous place and, in some cases, additional places are designated as *central cities,* based on official standards. For example, the Tucson, AZ MSA has one central city (Tucson), while the Riverside-San Bernardino, CA PMSA has 6 central cities (Riverside, San Bernardino, Palm Springs, Hemet, Temecula, and Palm Desert). There is no upper limit to the number of central cities in an MSA/CMSA; however, the MSA/CMSA title need not include all the central city names. If a place qualifies to be an MSA/CMSA central city but part is located outside the MSA/CMSA boundary, only the portion inside the MSA/CMSA is treated as the central city.

Urbanized Areas. The Bureau of the Census establishes the criteria for and delineates the boundaries of urbanized areas (UAs) to provide better identification of urban and rural territory, population, and housing in the vicinity of large places. A UA consists of one or more places (*central place*) and the adjacent densely settled surrounding territory (*urban fringe*) that together include at least 50,000 people. The central place(s) identify the most populous center(s) of each UA based on specific criteria. There is no limit on the number of central places in a UA, and not all central places are necessarily included in the UA title. For example, the Albuquerque, New Mexico UA is located within Bernalillo County; the city of Albuquerque is its central place and the suburbs of Albuquerque make up the urban fringe. (Part of the Albuquerque Service Unit of the IHS Albuquerque Area is included in the Albuquerque, NM UA.)

The urban fringe generally consists of contiguous territory having a population density of at least 1,000 people per square mile. The urban fringe also includes outlying territory of such density (i.e., at least 1,000

Table 1. continued

people per square mile) if the outlying territory is connected to the core of the contiguous area by road and meets certain other requirements. Other territory with a population density of fewer than 1,000 people per square mile may be included in the urban fringe if the territory eliminates an enclave or closes an indentation in the boundary of the UA, or is part of a place that meets specific criteria. Most UAs form the cores of MAs, but a few are not part of any MA.

Urban or Rural. The Bureau of the Census identifies all territory and population in the United States as either urban or rural. *Urban* includes all territory and population in UAs and in places (both incorporated and census designated) of 2,500 or more people outside UAs. The remaining territory and population are considered *rural.* For example, since only part of the Albuquerque Service Unit is included in the Albuquerque, NM UA, only this part is considered urban while the rest of the service unit is classified as rural. Incorporated places, that contain substantial, sparsely populated territory may be treated as rural even though they lie within corporate limits. Such places are referred to as *extended cities* outside of UAs.

Counties. Counties are the primary legal divisions of most states. In Louisiana, these primary divisions are known as *parishes.* In Alaska, the county equivalents (beginning with the 1980 census) consist of (a) the organized *boroughs* and (b) the *census areas* delineated for statistical purposes by the State of Alaska and the Bureau of the Census. In four states (Maryland, Missouri, Nevada, and Virginia), one or more cities are independent of any county organization and thus are themselves primary divisions of their states. The Census Bureau refers to these places as *independent cities* and treats them as the equivalent of counties for statistical purposes. A portion of Yellowstone National Park in Montana is also treated as a county equivalent. Each state is covered in its entirety by counties and statistically equivalent entities. The District of Columbia has no primary divisions, and the entire area is considered to be the equivalent of a county for statistical purposes.

Table 2. Indian-operated Urban Projects (by IHS Area), catchment areas, and associated original 1990 census count of Indians residing there.

Urban Project	Catchment Area	1990 Census Indian Population
Aberdeen Area		
Omaha-Lincoln-Sioux City		
	Omaha, NE MSA	3,159
	Lincoln, NE MSA	1,207
	Sioux City, IA MSA	1,999
Pierre-Aberdeen-Sioux Falls		
	Pierre, SD City	834
	Aberdeen, SD City	812
	Sioux Falls, SD MSA	1,680
Albuquerque Area		
Albuquerque	Albuquerque, NM MSA	16,296
Denver	Denver, CO PMSA	12,571
Bemidji Area		
Chicago	Chicago, IL PMSA	11,550
Detroit	Detroit, MI PMSA	16,885
Green Bay	Green Bay, WI MSA	3,869
Milwaukee	Milwaukee, WI PMSA	8,001
Minneapolis	Minneapolis, MN City	12,335
Billings Area		
Billings	Billings, MT MSA	3,235
Butte	Butte, MT City	517
Great Falls	Great Falls, MT MSA	3,072

is Salt Lake City, Utah (the MSA, in this case, is the Salt Lake City-Ogden, UT MSA).

- If the Urban Project is identified by the names of multiple cities, then its catchment area includes the catchment area associated with each city. For example, the Omaha-Lincoln-Sioux City Urban Indian Project catchment area consists of Omaha, Nebraska MSA, the Lincoln, NE MSA, and the Sioux City, Iowa MSA.

The above algorithm results in reasonable catchment areas for Urban Indian Projects for planning and statistical purposes. Table 2 lists each Urban Project (as of October 1, 1995), its catchment area, and the associated original 1990 census count of Indians residing there.

Indian Population by Various Geographic Concepts, 1990

To illustrate how the Census geographic concepts apply to the Indian population and the IHS, 1990 original census

Table 2. continued

Helena	Helena, MT City	572
Missoula	Missoula, MT City	1,045
California Area		
Bakersfield	Bakersfield, CA MSA	7,026
Fresno	Fresno, CA MSA	7,119
Los Angeles	Los Angeles, CA City	16,379
Sacramento	Sacramento, CA MSA	17.021
San Diego	San Diego, CA MSA	20,066
San Francisco-Oakland		
	San Francisco, CA PMSA	7,232
	Oakland, CA PMSA	14,230
San Jose	San Jose, CA PMSA	9,269
Santa Barbara	Santa Barbara, CA City	758
Nashville Area		
Boston	Boston, MA PMSA	5,250
New York	New York, NY PMSA	29,711
Navajo Area		
Flagstaff	Flagstaff, AZ City	4,210
Oklahoma City Area		
Dallas	Dallas, TX PMSA	12,635
Wichita	Wichita, KS MSA	5,160
Phoenix Area		
Phoenix	Phoenix, AZ MSA	38,017
Reno	Reno, NV MSA	4,921
Salt Lake City	Salt Lake City, UT City	2,541
Portland Area		
Portland	Portland, OR PMSA	11,307
Seattle	Seattle, WA PMSA	23,727
Spokane	Spokane,WA MSA	5,539
Tucson Area		
Tucson	Tucson, AZ MSA	20,330

Table 3. Total U.S. American Indian and Alaska Native population and percent, by Bureau of the Census geographic areas, 1990.

Population Category	1990 Census Population	Percent of Total U.S. Indians
Total U.S. Indians	**1,959,234**	**100.0**
Indians in Urban Areas	1,100,534	56.2
Indians in Rural Areas	858,700	43.8
Indians in Metropolitan Areas	1,002,984	51.2
Indians in non-Metro Areas	956,250	48.8
Indians in Indian Areas	739,108	37.7
Indians in non-Indian Areas	1,220,126	62.3
Indians in IHS Service Area	1,161,629	59.3
Indians outside IHS Service Area	797,605	40.7
Indians in Urban Projects Catchment Area	362,087	18.5
Indians outside Urban Projects Catchment Area	1,597,147	81.5

counts have been listed, by Bureau of the Census geographic areas, in Tables 3 through 5. These are the official Indian counts published by the Bureau of the Census from the 1990 census. Table 3 shows the total U.S. Indian count by various geographic categories; Table 4 presents the IHS service area by categories for which data are readily available; and Table 5 displays the Urban Projects catchment area population by geographic categories for which data are readily available.

The Bureau of the Census has subsequently issued modified 1990 census Indian counts by age, sex, and state and county of residence. IHS uses these modified age and sex counts to present 1990 census counts of Indian populations in its statistical data, since they reflect a more accurate Indian count (i.e., they adjust for reporting problems). However, the Bureau of the Census, because of policy considerations, did not alter its official Indian population counts (for geographic areas other than state or county, or socio-economic variables other than age or sex) based on the revised age and sex counts. The Census publications are based on their original Indian population counts. Therefore, in order to develop the various breakdowns below, it was necessary to use the original census counts rather than the modified census counts. The modified census count for U.S. Indians is 5.4 percent greater than the original census count, but the relationships remain essentially the same regardless of which Indian population count is used.

Conclusion

The experiences of many IHS/tribal primary care providers would logically lead them to conclude that the Indian Health Service is a rural health care delivery system. Yet, Table 3 (which uses Bureau of Census definitions) indicates that 56.2 percent of all American Indians and Alaska Natives reside in “urban” areas and that 51.2 percent live in “metropolitan” areas. How can this be?

It is important to choose the appropriate geographic entity for the issue being addressed. Since the IHS primarily serves Indians living on and near reservations, the

Table 4. IHS service area population by categories for which data are readily available.

Population Category	1990 Census Population	Percent of Total U.S. Indians
Total IHS Service Population	**1,161,629**	**100.0**
Indians in Metropolitan Areas	405,203	34.9
Indians in non-Metro Areas	756,426	65.1
Indians in Urban Projects Catchment Area	134,088	11.5
Indians outside Urban Projects Catchment Area	1,027,541	88.5

Table 5. Urban Indian Projects catchment area population by categories for which data are readily available.

Population Category	1990 Census Population	Percent of Total U.S. Indians
Total	**362,087**	**100.0**
Indians in Metropolitan Areas	354,097	97.8
Indians in non-Metro Areas	7,990	2.2
Indians in IHS Service Area	134,088	37.0
Indians outside IHS Service Area	227,999	63.0

IHS delivery system is better characterized by referring to the IHS service area (Table 4) rather than all U.S. Indians (Table 3). Table 4 indicates that 34.9 percent of IHS service area Indians live in metropolitan areas as opposed to 51.2 percent for all U.S. Indians. (It is difficult to calculate the urban-rural split for the IHS service area since urbanized areas do not follow county lines.) This still may seem like a high percentage for Indians living on and near reservations. However, the Bureau of the Census definitions of metropolitan, urban, and rural do not necessarily coincide with an individual's perception of what those concepts mean.

This article has attempted to clarify the Bureau of the Census geographic concepts and relate them to the Indian population being served by the IHS.

Reference

1. D'Angelo A. Is it service population or user population? *The IHS Primary Care Provider.* 1993;18(9):153-156. ®

MEETINGS OF INTEREST ®

Diabetes Translation Conference
March 31-April 3, 1996 Washington, DC

The National Center for Chronic Disease Prevention and Health Promotion (NCCDPHP) of the Centers for Disease Control and Prevention (CDC) is sponsoring this conference with the theme "Health Care in Transition: Diabetes as a Model for Public Health." The meeting will be held at the Stouffer Mayflower Hotel in Washington, DC. For more information, contact Cheryl Shaw, NCCDPHP, CDC, 4770 Buford Highway, Atlanta, GA 30341 (phone: 770-488-5004).

USPHS Commissioned Officers Association
May 12-15, 1996 Tulsa, OK

The annual meeting of the U.S. Public Health Service Commissioned Officers Association will be held at the Adam's Mark Hotel in Tulsa, Oklahoma. The meeting will provide an opportunity for the exchange of information among professional colleagues, as well as exposure to a wide variety of Public Health Service programs. For more information, contact Laurie Johnson, USPHS Commissioned Officers Association, 2111 Wilson Boulevard, Suite 321, Arlington, VA 22201 (phone: 703-243-1301).

IHS/Tribal Nurse Educators
May 22-23, 1996 Albuquerque, NM

The third annual conference for Nurse Educators is scheduled to be held at the Ramada Inn Classic in Albuquerque, pending funding for the conference. Nurse Educators (nurses who provide training, including orientation, inservice, and continuing education, to nursing staff) employed by the IHS or the tribes, and other interested persons, are welcome to attend. It is recommended that those interested in attending begin *now* to identify funds to cover their transportation and per diem.

An agenda and registration materials will be available in early March, and can be obtained by writing to the IHS Clinical Support Center, 1616 East Indian School Road, Suite 375, Phoenix, AZ 85016 (phone: 602-640-2140).

Southwest Regional Pharmacy Seminar
May 31-June 2, 1996 Scottsdale, AZ

This annual continuing education seminar is held for IHS- and tribal-employed pharmacists working in the IHS Phoenix, Navajo, Albuquerque, Tucson, California, and Portland areas. Fifteen hours of ACPE credit will be available to attendees. More information and the agenda will be available in early 1996. For more information, contact Stephan Foster, PharmD, IHS Clinical Support Center, 1616 East Indian School Road, Phoenix, AZ 85016 (phone: 602-640-2140).

Mid-Level Primary Care Providers
June 3-6, 1996 Scottsdale, AZ

This conference for mid-level providers (physician assistants, nurse practitioners, nurse midwives, and pharmacist practitioners) employed by the Indian Health Services (IHS) or the tribes will offer 20 hours of continuing education designed to meet the learning needs of those providing primary care to American Indians and Alaska Natives. An agenda will be available in early Spring. There is a registration fee of $150 for those employed by compacting tribes and those in the private sector. For additional information, contact the IHS Clinical Support Center, 1616 East Indian School Road, Suite 375, Phoenix, AZ 85016 (phone: 602-640-2140).

SPECIAL ANNOUNCEMENTS ®

Continuing Education on Child Abuse Available

A new continuing education module on "Child Physical Abuse" is available for use at your facility by either individuals or in a group format. The module is based on a slide/tape program, "The Visual Diagnosis of Physical Child Abuse," developed in a cooperative venture between the C. Henry Kemp National Center on Child Abuse and Neglect (NCAAN), the National Resource Center on Child Abuse and Neglect, and the American Academy of Pediatrics. Included in the module are goals and objectives, discussion questions, an evaluation, a posttest, a sample announcement, and instructions about how to use the materials and obtain CE credit.

This activity is intended for physicians, nurses, and anyone else employed by the Indian Health Service or the tribes who is involved in the management of patients, families, and communities affected by child physical abuse. It is expected that after having completed the module, participants will be able to: (1) incorporate the elements of the history, physical examination, and laboratory and radiologic evaluation presented in the module into their evaluation of victims of child physical abuse, (2) recognize the physical findings of child abuse including bruises and abrasions, fractures, head and neck injuries, head trauma, ocular trauma, and burns, (3) make appropriate referrals for patients and families who have been affected by child physical abuse, (4) create accurate and medicolegally useful records of alleged child physical abuse, and (5) help design a response system at the service unit that can meet all of the needs of the patient, family and community when this problem arises.

It takes between two and three hours to complete the module, and it can be divided into two or more sessions. This activity was developed in accordance with the Accreditation Council for Continuing Medical Education (ACCME) Essentials and the Criteria of the American Nurses Credentialing Center Commission on Accreditation.

To participate, send your written request to the IHS Clinical Support Center, 1616 East Indian School Road, Suite 375, Phoenix, Arizona 85016.

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THE IHS PRIMARY CARE PROVIDER

The Provider is published monthly by the Indian Health Service Clinical Support Center (CSC). Telephone: (602) 640-2140; Fax: (602) 640-2138. Previous issues of *The Provider* (beginning with the December 1994 issue) can be found on the IHS health care provider home page (http://www.tucson.ihs.gov)

Circulation: *The Provider* (ISSN 1063-4398) is distributed to more than 6,000 health care providers working for IHS and tribal health programs, to medical and nursing schools throughout the country, and to health professionals working with or interested in American Indian and Alaska Native health care. If you would like to receive *The Provider,* free of charge, send your name, address, professional title, and place of employment to the address listed below.

Publication of articles: Manuscripts, comments, and letters to the editor are welcome. Items submitted for publication should be no longer than 3,000 words in length, typed, double-spaced, and conform to manuscript standards. IBM-compatible word processor files are preferred.

Authors should submit at least one hard copy with each electronic copy. Manuscripts may be received via the IHS Banyan electronic mail system. References should be included. All manuscripts are subject to editorial and peer review. Responsibility for obtaining permission from appropriate tribal authorities/Area Publications Committees to publish manuscripts rests with the author. For those who would like some guidance with manuscripts, a packet entitled "Information for Authors" is available by contacting the CSC at the address below.

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